

CLAIMS

What is claimed:

1. A method comprising:
forming a first conductive material in an opening through a dielectric to a contact point;
forming a second conductive material on the first conductive material;
and
wherein the first conductive material comprises a unidirectional electrical conductivity and the unidirectional conductivity is configured to be in a direction corresponding to a projection to or from the contact point and the second conductive material.
2. The method of claim 1, wherein forming the second conductive material comprises introducing a seed material into the via in a manner that leaves the first conductive material overlying the contact point.
3. The method of claim 1, wherein the contact point is a contact point to a circuit device, and wherein forming a first conductive material includes forming in a via of the dielectric to contact the circuit device.
4. The method of claim 1, further comprising forming an interconnect structure in the opening on the second conductive material.
5. The method of claim 4, further comprising:
forming a third conductive material on an exposed portion of the interconnect structure,
wherein the third conductive material comprises a unidirectional electrical conductivity in a direction normal to the exposed portion of the interconnect structure.
6. The method of claim 5, further comprising:
prior to forming the third conductive material, modifying the exposed surface of the interconnect structure, wherein modifying the surface of the

interconnect structure comprises one of stripping with a stripping agent, planarizing, polishing, and doping with a dopant.

7. The method of claim 1, wherein forming the first conductive material comprises deposition via one of electroplating, chemical vapor deposition, sputter deposition, molecular beam deposition, and gel separation in an electronic field.

8. The method of claim 1, wherein forming the second conductive material comprises sputter depositing the second conductive material into the opening.

9. The method of claim 1, wherein the first conductive material comprises one of an organic material, an organo-metallic material, barium, copper, a doped polymer material, and a polymer based material.

10. The method of claim 1, wherein forming the first conductive material includes forming a layer of material comprising a property tending to reduce metal diffusion between the second conductive material and the dielectric.

11. The method of claim 1, wherein forming the first conductive material includes forming a layer of material comprising a property tending to reduce electron migration between the second conductive material and the dielectric.

12. The method of claim 1, wherein forming the first conductive material includes forming a layer of material comprising a property tending to act as an etch stop layer.

13. The method of claim 1, further comprising chemically-mechanically polishing the first conductive material with a polishing slurry.

14. The method of claim 1, further comprising doping the first conductive material.

15. A method comprising:

forming a first conductive material on a first dielectric material on a substrate and on an exposed first interconnect disposed in the first dielectric,

wherein the first conductive material comprises a unidirectional electrical conductivity and the unidirectional conductivity is configured to be in a direction normal to the exposed first interconnect.

16. The method of claim 15, further comprising:
forming a second dielectric material on the first conductive material;
forming an opening through the second dielectric material and to a contact point of the first conductive material overlying the exposed first interconnect; and

forming a second conductive material in the opening and to the contact point,

wherein the first conductive material comprises a unidirectional electrical conductivity and the unidirectional conductivity is configured to be in a direction corresponding to a projection to or from the exposed first interconnect and the second conductive material overlying the contact point.

17. The method of claim 16, further comprising forming a second interconnect structure in the second opening and to the second conductive material overlying the contact point.

18. A device comprising:
a substrate comprising a circuit device and a contact point;
a dielectric material overlying the circuit device with an opening to the contact point;

a first conductive material in the opening and to the contact point; and
a second conductive material on the first conductive material,

wherein the first conductive material comprises a unidirectional electrical conductivity and the unidirectional conductivity is configured to be in a direction corresponding to a projection to or from the contact point and the second conductive material.

19. The device of claim 18, wherein the circuit device comprises an interconnection line.

20. The device of claim 18, wherein the opening has sidewalls and a base and the first conductive material substantially coats the sidewalls and the base of the opening.
21. The device of claim 18, further comprising an interconnect structure in the opening and on the second conductive material.
22. The device of claim 21, wherein the first conductive material is disposed between the contact point and the second conductive material,
wherein the second conductive material comprises a seed layer disposed between the first conductive layer and the interconnect structure.
23. The device of claim 18, wherein the first conductive material comprises one of an organic material, an organo-metallic material, barium, copper, a doped polymer material, and a polymer based material.
24. The device of claim 18, wherein the second conductive material comprises one of copper (Cu), aluminum (Al), Tungsten, Tungsten Nitride, Titanium, Titanium Nitride, Titanium Tungsten, Tantalum, Tantalum Nitride, and Silicon Carbide.
25. The device of claim 18, wherein the first conductive material comprises a thickness in the range of between 50 angstroms and 1800 angstroms.
26. The device of claim 18, wherein the first conductive material comprises a polymer having at least one of a hydrodynamic volume in the range of between 0.5 cubic nm and 50 cubic nm and a molecular weight in the range of between 1000 Daltons molecular weight and 200000 Daltons molecular weight.